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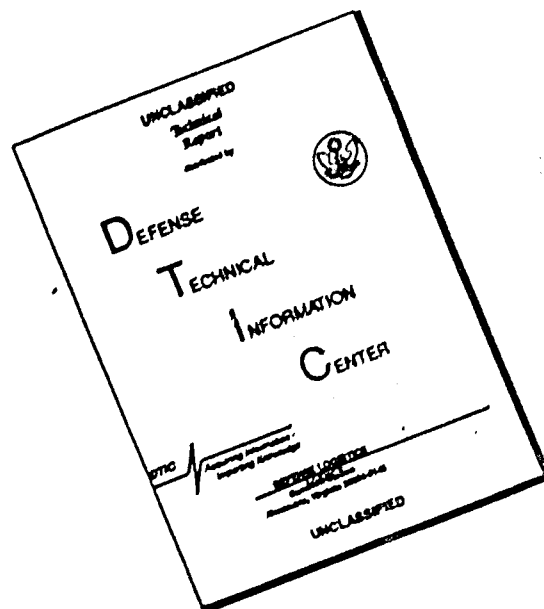
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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGAM-P (M) (19 Jul 68) FOR OT RD 682030

9 August 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 27th
Engineer Battalion (Cbt), Period Ending 30 April 1968 (U)

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2. Information contained in this report is provided to insure appro-
priate benefits in the future from lessons learned during current
operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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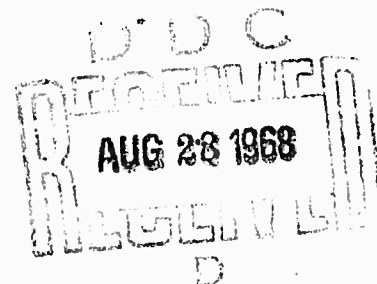
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DEPARTMENT OF THE ARMY
HEADQUARTERS 27TH ENGINEER BATTALION (COMBAT)
APO 96308

EGD-BC-CO

7 May 1968

SUBJECT: Operational Report -- Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 30 April 1968

THRU: Commanding Officer
45th Engineer Group (Const)
ATTN: EGD-3
APO 96337

Commanding General
18th Engineer Brigade
ATTN: AVBC-C
APO 96377

Commanding General
United States Army, Vietnam
ATTN: AVHGC-DH
APO 96307

Commander in Chief
United States Army, Pacific
ATTN: GPOP-OT
APO 96558

TO: Assistant Chief of Staff for Force Development
Department of the Army (ACSFOR DA)
Washington, D.C. 20310

FOR OT RD
682030

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EGD-BC-CO

7 May 1968

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 30 April 1968

Enclosed is the Operational Report - Lessons Learned for the 27th
Engineer Battalion (Combat) and attached units.

Thomas R. Hicklin

- 3 Incl
1. as
2. ORLL, 591st Engr Co (LE)
3. After Action Report (398th
Maintenance Hardstand)

THOMAS R HICKLIN
MAJOR CE
Acting Commander

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15 - S-3, 27th Engr Bn (C)
1 - As indorsed US Army Engineer School
1 - As indorsed HQ, 8th US Army, ATTN: Engr (AVCC-1HD)
2 - Each Company, 27th Engr Bn (C)
2 - 591st Engr Co (LE)

5 Incl 1

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SECTION I Significant Organizational or Unit Activities

1. Command

a. During the reporting period the 27th Engineer Battalion (Combat) was located in Blackhorse, Vietnam (YS438975) until 7 April 1968. On 7 April 1968, the unit relocated to Bien Hoa (YT044147) and remained there until 12 April 1968. The final move to the present 27th Engineer Battalion (Combat) location at Gia Le (YD833152) occurred on 12 April 1968.

b. The major activities of the Battalion include: Base construction, combat support to II Field Forces Vietnam (IIFFV) and Provisional Corps Vietnam (PCV), airfield construction and rehabilitation, lines of communication (LOC) upgrading and rehabilitation and base camp security.

c. During this reporting period, the Battalion remained assigned to the 20th Engineer Brigade and attached to the 34th Engineer Group (Const) for operational control until 5 April 1968 at which time the 27th Engineer Battalion (Combat) was assigned directly to the 20th Engineer Brigade. Upon arrival at Gia Le on 12 April 1968, the 27th Engineer Battalion (Combat) became assigned to the 18th Engineer Brigade and further attached to the 45th Engineer Group (Const) for operational control.

d. Company D, 27th Engineer Battalion (Combat) on 18 February 1968, upon arrival at Phan Thiet, RVN, came under the operational control of the 18th Engineer Brigade. Company D was attached to the 37th Engineer Battalion (Const) for administrative purposes on 12 April 1968.

e. Commanders:

(1) During the entire reporting period, LTC Kent C. Kolley, 069124, was the Battalion Commander.

(2) The Company Commanders during the reporting period were as follows:

HHC - Kenneth J. Kerr, 1LT, 05225494 (1 February 1968 to 20 February 1968 (DEROS)); Clifford L. Titus Jr., 1LT, 05241821 (20 February 1968 to 30 April 1968).

A - Ralph P. Dunn, 1LT, 05233884

B - John R. Van Zoo, 1LT, 05233902

C - Woodrow G. Lyon, CPT, 05321495 (1 February 1968 to 24 March 1968); David R. Kaiser, 1LT, 05233958 (24 March 1968 to 30 April 1968).

D - Leslie E. Snell, CPT, 05315151

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f. Organizational Structures:

(1) Assigned:

Headquarters and Headquarters Company. Blackhorse (1 February - 7 April 1968), Bien Hoa (7 April 1968 - 10 April 1968), Da Nang (10 April 1968 - 12 April 1968) and Gia Lo (12 April 1968 - 30 April 1968).

A Company. Blackhorse (1 February 1968 - 5 April 1968), Bien Hoa (5 April 1968 - 10 April 1968), Da Nang (10 April 1968 - 12 April 1968) and Gia Lo (12 April 1968 - 14 April 1968) and Thon Kho Bay (14 April 1968 - 30 April 1968). (YD746130).

B Company. Blackhorse (1 February 1968 - 6 April 1968), Bien Hoa (6 April 1968 - 10 April 1968), Da Nang (10 April 1968 - 12 April 1968) and Gia Lo (12 April 1968 - 30 April 1968).

C Company. Blackhorse (1 February 1968 - 6 April 1968), Bien Hoa (6 April 1968 - 10 April 1968), Da Nang (10 April 1968 - 12 April 1968) and Gia Lo (12 April 1968 - 30 April 1968).

D Company. Blackhorse (1 February 1968 - 18 February 1968) and Phan Thiet (18 February 1968 - 30 April 1968).

(2) Attachments:

591st Engineer Company (Light Equipment). Blackhorse (1 February 1968 - 6 April 1968), Bien Hoa (6 April 1968 - 10 April 1968), Da Nang (10 April 1968 - 12 April 1968) and Gia Lo (12 April 1968 - 30 April 1968).

(3) Detachments:

27th Land Clearing Team is assigned to the 27th Engineer Battalion (Combat) but is attached for all purposes to the 168th Engineer Battalion (Combat).

(4) Operational Control:

During the period 1 February 1968 - 6 April 1968, two sections of the 67th Engineer Company (Dump Truck) were under the operational control of the Battalion. On 6 April 1968 they were released to their parent organization, the 36th Engineer Battalion (Const).

g. The following awards have been earned by the members of this command:

Silver Star Medal - 1
Bronze Star Medal - 4
Army Commendation Medal - 16

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h. Meritorious Unit Citation:

On 3 March 1968, a Battalion award ceremony was held at Blackhorse, RVN. After reviewing the Battalion, Brigadier General Chapman, Commanding General, 20th Engineer Brigade, added the Meritorious Unit Commendation streamer to the Distinguished Unit Citation and Battalion streamers already displayed by the Battalion. The Meritorious Unit Commendation was presented under the direction of the Secretary of the Army for Meritorious Service in support of Military Operations in the Republic of Vietnam during the period October 1966 - April 1967.

2. Personnel, Administration, Morale and Discipline

a. At the end of the reporting period the Battalion strength was as follows:

	<u>O</u>	<u>WO</u>	<u>NCO</u>	<u>EM</u>	<u>TOTAL</u>
* AUTH	42	4	147	851	1,044
ASG	39	4	121	831	995
ATCH	0	0	0	30	30

* Includes 591st Engr Co (LE) and 27th Land Clearing Team.

b. Personnel Statistics:

- (1) KIA: EM - 2 OFF - 0
- (2) WIA: EM - 36 OFF - 2
- (3) Medical Evacuation Out of Country: EM - 5 OFF - 0
- (4) Lossos:
 - (a) ETS: EM - 89 OFF - 1
 - (b) DEROS: EM - 111 OFF - 7
 - (c) Transferred (within RVN): EM - 57 OFF - 7
- (5) Extended (OS Tour): EM - 32 OFF - 3

c. Morale:

The Rest and Recuperation Program is functioning extremely well. The system now in effect has made possible a flexible response which has enabled the Battalion to utilize virtually every allocation given to it. The statistics for this period are as follows:

	<u>Original Allocations</u>		<u>Turnback Allocations</u>	
	Received	Used	Received	Used
Feb	66*	66*	29/33*	29/32*
Mar	85	85	26	26
Apr	66	66	18	18

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The In-Country R & R quotas are few in number since most are given to combat units. The average number received is three per month. One of these is given to the "Soldier of the Month".

* Of these 98 allocations all were cancelled except for 14 to Hawaii. The reason for cancellation was that the Battalion received alert orders to move; those orders were then revoked. The Battalion then received 29 allocations. In addition to the 29 received, 21 people left on standby status, for a total of 64 people that went on R & R in February.

d. Discipline:

Discipline problems have been relatively few during this reporting period. Statistics show 67 Article 15's, 5 Special Court Martials and 2 Congressional Inquiries.

3. Intelligence and Counterintelligence

a. Intelligence activities during this past quarter have consisted primarily of investigating VC mine incidents. The very high priority placed by the VC on LOC interdiction is reflected in the Summary of LOC Interdictions. Mine incidents in our AO were found to take place generally in selected locations. This probably due to:

- (1) The mines were emplaced by local forces near their home villages.
- (2) Sappers chose spots that were easy to work.
- (3) The bulk of the population was not hampered by the mines. They were emplaced more to keep US and local forces out of selected areas of territory rather than the local populace.
- (4) Mines were emplaced to hamper the US Engineer effort.

A further insight into the VC's methods was indicated by a local farmer. He stated that they normally marked the location of their mines so that the sympathetic villagers in the area could travel in "relative" safety. Those unfamiliar with the area courted disaster.

b. Summary of LOC Interdictions:

- (1) Number of Roadblocks: 76
- (2) Number of Craters: 17
- (3) Number of Blown Culverts: 8
- (4) Number of Mine Incidents: 17
- (5) Number of Mines Found: 26

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The Intelligence Section's other primary effort was devoted to assisting the Battalion in its move to Gia Le in April.

d. Counter Intelligence Activities:

- (1) CONFIDENTIAL Clearances Granted: 180
- (2) SECRET Clearances Granted or Validated: 11
- (3) TOP SECRET Clearances Validated: 0
- (4) Revocations, Suspensions, etc: 2

e. Observations:

(1) Most VC mines are buried at or near the surface of the roadway during the dry season.

(2) One type of detonator was discovered which required a brass washer be shoared thru by the weight of a passing vehicle. Simple in theory - this often required several passes over it to set it off.

f. Security:

(1) While at Blackhorse Base Camp, the 27th Engineer Battalion (Combat) conducted nightly ambush patrols with only one or two possible enemy contacts. During the last quarter an estimated 6,378 manhours were expended by the Battalion on ambush patrol duties. Occasional reconnaissance patrols will be required at Gia Le though not of this magnitude.

4. Plans, Operations and Training

a. Plans:

(1) During this period, the operations section continued refinement of Base Development plans and unit area layouts for three cantonments in the Battalion area of responsibility. Base Development/Master Plans for Blackhorse Base Camp were revised for current troop strengths and prepared for submission by the Base Development Board.

(2) Site layout and detailed working drawings were completed for the Base Service Club, 398th Maintenance Hardstand, Base Fire Station and Base Unit Maintenance Buildings. "As-Built" drawings of the Vinh Long and Phu Quoc Airfields were made. Standard drawings for a 20 ft truss, 20' x 100' Warehouse, 20' x 100' two-story barracks, single story barracks and concrete wall-forms were prepared.

(3) The Ad Hoc Committee visited Blackhorse Base Camp on 16 February 1968. Composed of USARV personnel, the purpose of this committee was to make recommendations on the scope and direction of further construction at major base camps in Republic of Vietnam. Coordination with

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the members of this committee and the plans and operations section of the 27th Engineer Battalion (Combat) was on a personal basis because the nature of the committee's mission was to observe Blackhorse Base Camp, not the 27th Engineer Battalion (Combat).

As a result of close coordination, two project directives, greatly increasing the authorized scope of base construction, were received shortly after the committee's departure.

The construction priorities of the newly directed projects (Service Club, Aircraft Support and Unit Maintenance Facilities) were coordinated through a formal meeting held 21 February 1968 (attended by the Deputy Commander USAECV (P), Deputy Commander 20th Engineer Brigade, Commanding Officer 34th Engineer Group (Const), Commanding Officer 27th Engineer Battalion (Combat) and the Deputy Post Commander Blackhorse), a Base Development Board meeting held 11 March 1968 and many informal coordinating sessions conducted between the Plans and Operations Section and all concerned parties.

Through this planning Blackhorse Base Camp construction priorities for the future were firmly established on 4 April 1968 when all 27th Engineer Battalion (Combat) projects were transferred to the 36th Engineer Battalion (Const).

b. Cantonment Construction Activities:

(1) During the reporting period elements of the 27th Engineer Battalion (Combat) continued base construction at Blackhorse, Xuan Loc and Chua Char (Hill 837).

(2) Headquarters and Headquarters Company, 27th Engineer Battalion (Combat)

Headquarters Company with only a limited capability for construction was responsible for renovating the existing messhall by installing adequate lighting, providing shelves for dustproof storage of food and cooking utensils and installation of a hot water system utilizing a 600 gallon per hour water heater. Additionally, arms racks, supply room storage shelves, general unit building repairs and the installation of two hot water systems for showers were constructed by the Headquarters Company carpentry section during this period.

(3) A Company, 27th Engineer Battalion (Combat)

(a) Water Wells and Fill Stands:

During this period, Company A completed the plumbing on the water well and fill stand at the Long Giao Airfield and constructed three fill stands and three water towers for 21,000 gallon tanks in Xuan Loc, RVN. Construction of the water towers included assembling and placing of the 21,000 gallon tanks. The locations of the water towers and fill stands were at 54th Artillery Group Headquarters, 2nd Battalion, 35th Artillery and 7th Battalion, 8th Artillery.

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(b) On 17 February 1968, work began on warehouse construction as part of project 66-179DC-79. On 2 April 1968, when work halted on all Battalion projects, two each 20' x 100' warehouses, one each two hole and four hole latrines and one each two head and four head showers had been completed in accordance with approved plans, specifications and changes.

(c) Self-Help Construction. During this quarter a concrete batch plant was operated from 1 to 17 February 1968 by D Company and from 17 February until 2 April 1968, by Company A. The batch plant produced 1,854 cu yds of concrete during this period. The concrete was used for 81,600 sq ft (68 - 20' x 60') of troop billets, 1,240 sq ft of administration building pad, 4,000 sq ft of warehouse pads, a 2,000 sq ft two-story barracks pad and a 600 sq ft fire direction center pad. Additionally this batch plant supplied concrete for headwall construction in base camp and along Highway QL-1 and LTL-2.

(4) B Company, 27th Engineer Battalion (Combat)

During this reporting period, B Company was involved in the following aspects of Blackhorse Base Camp Development:

(a) On a daily basis an average of two D7 Bulldozers were employed by B Company, under the direction of the Deputy Camp Commander, to improve the perimeter defenses of the base camp.

(b) Three - 18" culverts with concrete headwalls were constructed to improve access to the base community services area.

(c) A prefab yard that produced 480 knee braces, 284 - 20' trusses and 3,144 purlin blocks for issue to troop self-help billets projects was organized and operated by B Company.

(d) On 2 April 1968, when work ceased on all Battalion projects, B Company was 15% complete on a Base Service Club and a model two story billet for future units to copy when constructing the same on a self-help basis.

(5) C Company, 27th Engineer Battalion (Combat)

60 Bed Surgical Hospital

On 10 February 1968, the 1st platoon initiated construction on a Nurses' Lounge, the final building included under project number 89-200-13-T-6S (60 Bed Surgical Hospital for Blackhorse Base Camp). Included in this 16' x 30' Nurses' Lounge was complete plumbing facilities for hot and cold running water and waterborne sewage to include a septic tank and drainage field. With the completion of the Nurses' Lounge on 30 March 1968, the 60 Bed Surgical Hospital at Blackhorse Base Camp was completed according to approved plans, specifications and changes.

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c. Operational Support Activities:

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(1) During the reporting period, elements of the 27th Engineer Battalion (Combat) participated in operational support activities in Blackhorse Base Camp, Xuan Loc and Phan Thiet. Units have participated in operational support missions in Long Thanh, Binh Thuan and Thua Thien provinces.

(2) Beginning with the Viet Cong TET offensive (1 February 1968) and lasting into mid-March 1968 the plans and operations section was responsible for the timely coordination of the 27th Engineer Battalion (Combat) response to frequent LOC interdictions. At the height of this period (4-11 February 1968) the 27th Engineer Battalion (Combat):

- (a) Repaired 12 road craters.
- (b) Removed and destroyed 9 roadblocks.
- (c) Cleared 147 kilometers of roads of mines.
- (d) Recovered 7 enemy mines.
- (e) Destroyed in-place 7 enemy mines.

(f) Conducted a search and destroy mission to secure the four square kilometer area around the laterite pit at YT455005.

(g) Designated two companies as the Blackhorse Ready Reaction Force allowing a larger commitment by the 3/5 Armored Cavalry Regiment elements outside the base camp.

(3) After the height of the offensive the 27th Engineer Battalion (Combat) continued to repair/remove LOC interdictions with an average of one incident per day. Sufficient and timely response to these interdictions was aided by two factors:

(a) Upon departing base camp for work site locations each company loaded its five ton dump trucks with fill material for crater repair.

(b) After coordination with the 11th Armored Cavalry Regiment, one officer from the plans and operations section overflowed the roads within the 27th Engineer Battalion (Combat) area of operations (AO) each morning at first light. His report of the type and amount of response required to repair an interdiction facilitated the speed with which the road was reopened.

(c) Each day one company was required to maintain a mine detector team on standby call which was dispatched at the first report of a mine incident within the 27th Engineer Battalion (Combat) AO.

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(4) As a result of the TET offensive the plans and operations section received a message from 34th Engineer Group (Const) on 17 February 1968 requiring a status of completed aircraft revetments versus authorized aircraft in the 27th Engineer Battalion (Combat) area of responsibility (AOR). The survey indicated that 8 additional revetments were required, all at Blackhorse Base Camp. On 8 March 1968, a directive requiring the completion of the 8 outstanding revetments was received from 34th Engineer Group (Const). By 20 March 1968, the last required revetment was completed.

(5) Operation Bear (Battalion Move):

The following is a chronological account of the 27th Engineer Battalion's move from Blackhorse Base Camp to Gia Lo Combat Base. Although this account covers a period from 24 March 1968 through 30 April 1968, this is not the complete picture. Actual effort on projects in the Blackhorse area did not cease until 1 April 1968. Further, by the middle of April, the Battalion was engaged operationally with two companies (A and B(-)) and a Land Clearing Platoon deployed. In effect the major portion of the Battalion effort was interrupted for only 16 days:

(a) 24 March 1968 -- An information copy of a warning order concerning the 27th Engineer Battalion (Combat) move, issued by CG, III Marine Amphibious Force (MAF) was received at this Headquarters.

(b) 29 March 1968 -- Received deployment instructions from 34th Engineer Group (Const).

(c) 30 March 1968 -- The actual Movement Order, from 20th Engineer Brigade was received.

(d) 1 April 1968 -- All projects were turned over to the 36th Engineer Battalion (Const).

(e) 2 April 1968 -- The first Engineer equipment departed Blackhorse and arrived at the staging area in Bien Hoa.

(f) 3 April 1968 -- Movement Order received from 34th Engineer Group (Const).

(g) 4 April 1968 -- Advanced party consisting of the Battalion XO, Commo Officer, S-1, XO Company A and XO 591st Engr Co (LE) flew from Xuan Loc to Phu Bai and deployed by vehicle to Gia Lo. The S-2 moved to the Saigon docks along with the first of the conex containers. He (S-2) along with one NCO from Headquarters Company remained on the Saigon docks throughout the loading operation of the Sea Train Ohio, acting as coordinator between the Saigon Port Command and the 27th Engineer Battalion (Combat). Company B moved to Bien Hoa and established the Battalion staging area.

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(h) 5 - 7 April 1968 - The remaining units (HHC, A Co, C Co and 591st Engr Co (LE)) staged from Blackhorse to Bien Hoa. With the closing of HHC at 1130 hours, the Battalion, minus D Company, was assembled at Bien Hoa. All ordinance equipment accompanied and provided transportation for the individual units as they deployed to Bien Hoa. During this period the Sea Train Ohio was loaded. As a unit closed at Bien Hoa, personnel were off-loaded and ordinance equipment proceeded to the Saigon Docks to be loaded aboard the Sea Train Ohio.

(i) 8 April 1968 - Sea Train Ohio departed Saigon with the Battalion Maintenance Officer and mechanics.

(j) 10 April 1968 - 325 personnel were airlifted by six C-130 aircraft from Bien Hoa to Da Nang. This group was composed of ordinance equipment operators, their shotguns and company commanders. Sea Train Ohio docked at Da Nang and began off-loading. As equipment was driven off the docks it was staged at 35th Engineer Battalion area along with all of the airlifted personnel.

(k) 11 April 1968 - Sea Train Ohio completely unloaded. 1st LST departed Newport for Tan My with Engineer equipment.

(l) 12 April 1968 - Conveyed all ordinance equipment with personnel from Da Nang to Gia Lo. Airlifted 249 personnel from Bien Hoa to Huo - Phu Bai by C-130 aircraft. Here they were picked up by vehicle and transported to Gia Lo. Only personnel remaining at Bien Hoa were Battalion EEMO, Battalion PBO, 591st Maintenance Officer, one platoon Battalion Heavy Equipment, one platoon 591st, Engineer equipment operators whose equipment had not yet been loaded on LST and personnel having April R&R and DEROS.

(m) 19 April 1968 - 4th LST departed Newport.

(n) 20 April 1968 - 5th LST departed Newport; 3rd LST arrived Tan My.

(o) 22 April 1968 - 4th LST arrived Tan My.

(p) 23 April 1968 - 5th LST arrived Tan My.

(q) 26 April 1968 - 6th LST departed Newport; Battalion EEMO, 1 platoon 591st, 591st Maintenance Officer flow from Bien Hoa to Da Nang and then to Gia Lo.

(r) 30 April 1968 - 6th LST arrived Tan My.

(6) Headquarters and Headquarters Company, 27th Engineer Battalion (Combat)

The Heavy Equipment Section, in addition to providing general equipment support to the Battalion and constructing a 425 meter

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perimeter born at 54th Artillery Group Headquarters in Xuan Loc, completed a double surface treatment on a 150' x 450' section of the Blackhorse Airfield Parking Apron. The project started on 14 March 1968 and was completed on 30 March 1968 utilizing 806 cu yds of 3.5"(-) rock, 220 cu yds of 3/4"(-) rock, 60 cu yds of fines and 3200 gallons of RC-800.

(7) A Company, 27th Engineer Battalion (Combat)

(a) Xuan Loc Land Clearing

Between 10 February 1968 and 16 February 1968, the 3rd platoon of A Company was assigned the project of clearing land east of Xuan Loc for fields of observation and fire. During those seven days, they cleared 67 acres of trees, brush, foliage, etc., destroying one tunnel and eight loose mortar rounds and discovering one VC body.

(b) Operation Tiger Take Over

On 14 April 1968, A Company deployed to a field location (VIC YD745135). Hero work has begun on construction of necessary drainage structures along Highway 547 from the Huong River (YD755140) to FSB Birmingham (YD705103) and construction of the approaches to the Huong River Bridge.

(8) B Company, 27th Engineer Battalion (Combat)

(a) Maintenance Hardstands:

On 29 February 1968, work began on a 280' x 280' M&L matting surfaced aircraft maintenance hardstand for the 398th Transportation Company. Upon completion of the hardstand, four aircraft revetments were constructed of 55 gallon drums filled with laterite. The project was completed on 20 March 1968 (See Incl 3).

(b) 100% Revetments for Aviation

As a result of the Battalion survey on aircraft revetments vs authorized aircraft in the Battalion AOR, it was determined that four each L-shaped OH-23 revetments were required on Blackhorse Base Camp. Each OH-23 revetment consisted of 20' x 20' hardstand treated with a dust pallative. Around this hardstand was placed an L-shaped 24' x 48' x 4'6" revetment constructed of M&L matting form filled with laterite. Construction was initiated on 5 March 1968 and completed on 11 March 1968.

(c) Operation Delaware

On 20 April 1968 the 1st platoon of B Company deployed in stages to LZ Voghol (YD550035) to provide direct Engineer support and advice to the 3rd ARVN Airborne Task Force. To date this platoon has used explosives to clear three LZ's and construct one fire support base. As of 30 April 1968 this unit was still tactically deployed.

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(d) Operation Tiger Take Over

On 15 April 1968 the 3rd platoon of B Company deployed to FSB Henry (YD606093) and 4 days later deployed to their present location at FSB Bastogne (YD625092). To date this platoon has cleared two helipads, constructed perimeter defenses, dug platoon fortifications and prepared to commence on its primary mission of upgrading MSR 547 from FSB Bastogne to FSB Birmingham (YD705100).

(9) C Company, 27th Engineer Battalion (Combat)

(a) Helicopter Refueling Facility (Blackhorse)

On 3 March 1968, 3rd platoon began installation of 1,020 linear feet of four inch pipe with 10 refueling outlets for helicopter refueling and completed it on 25 March 1968.

(b) Chua Chan Cantonment

The only portion of the project uncompleted is the water distribution system. During this period 2nd platoon hooked up the primary pump and secondary pump. The secondary pump was not of sufficient head to pump water to the storage tank at the top of the mountain. A pump with sufficient head was secured but has not been installed. All necessary pipe was installed during this period.

(c) Command Bunker

Shortly after arrival at Gia Lo, the 2nd platoon began construction of the Special Forces (FOB I) Command Bunker. The necessary excavation and some prefabrication of timber braces has been accomplished.

(d) Eagle By-Pass (LOC Restoration)

This project includes approximately eight kilometers of road to be converted from a one lane to a two lane MILCV Standard Road; two kilometers of this will be a completely new road. Two single lane steel stringer bridges will replace two blown out bridges and 14 single culverts 50' long will be required. During this period the route was opened and reconnoitered determining necessary construction and an overlay was prepared. Construction of drainage structures cannot begin until materials are available. Lack of 60" and larger culvert requires construction of steel stringer bridges and lack of two inch lumber will delay construction of headwalls on culverts.

2. Lines of Communication (LOC) Upgrading

(1) Headquarters and Headquarters Company, 27th Engineer Battalion (Combat)

General support was provided to all units by the Heavy Equipment Section.

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(2) A Company, 27th Engineer Battalion (Combat)

QL-1 and LTL-2 Upgrade (34-67-39LOC-27)

During this reporting period, Company A extended a 72" culvert 12' and placed concrete headwalls on Highway LTL-2 in the immediate vicinity of Blackhorse Base Camp.

(3) B Company, 27th Engineer Battalion (Combat)

QL-1 and LTL-2 Upgrade (34-67-39LOC-27)

From 1 March 1968 until 2 April 1968 the 2nd platoon of B Company was involved in upgrading routes QL-1 and LTL-2. During this period ten culverts were either extended or replaced and 20 concrete headwalls and wingwalls were constructed.

(4) C Company, 27th Engineer Battalion (Combat)

QL-1 and LTL-2 Upgrade (34-67-39LOC-27)

During this period until 2 April 1968 the 2nd platoon was engaged in road drainage and bridge construction along QL-1 from LTL-333 to LTL-2, Long Khanh Province, RVN. Work was distributed into one major culvert-bridge site, 7 major culvert sites and three miles of road. All equipment support was provided by one platoon of the 591st Engineer Company (Light Equipment). The following is a summary of construction effort expended this period:

- (a) 24,370 sq yds of road completed.
- (b) 10,340 linear foot of drainage cut.
- (c) 68 acres of land cleared.
- (d) 395 cu yds of concrete poured.

o. Training

The following major training programs have affected this Battalion during the reporting period:

(1) Orientation classes conducted by the 11th Armored Cavalry Regiment totaling six days of instruction, were attended by 27th Engineer Battalion (Combat) replacements (effective until the unit moves).

(2) Operational necessity permitting, Battalion policy established Sunday afternoons for detailed maintenance and a minimum of a one hour block of scheduled instruction on training. Subjects covered

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were: Armed Forces Censorship, CBR Refresher, Character Guidance, Code of Conduct, Command Information, Civil Affairs, Defense Against Subversion and Espionage, Safeguarding Defense Information and Survival, Evasion and Escape. Other required recurring training was integrated with primary training where possible.

5. Logistics

a. The two activities which had the greatest effect on logistics during the period 1 February through 30 April were the TET offensive in early February and the Battalion move from the Saigon to the Hue-Phu Bai area in April.

b. The previous ORLL mentioned establishing of 30-day supply of high-volume construction materials based on PLL procedures. Because the highway between Saigon and Blackhorse Base Camp was closed during the TET offensive and because depot production was low during the same period, normal resupply of construction materials was impossible. As a result, stocks in the S-4 yard were depleted and it took almost a month to rebuild stockage levels. It was only after mid-March that the Battalion supply system could be considered capable of supporting base camp development again. Some improvement in supply response to project needs was noted; the primary reason for this was the early detection of depleting stocks, which permitted requisitions to be submitted and stocks replenished in a much more timely manner.

c. During the period water points were committed in support of the 11th Armored Cavalry Regiment, 101st Airborne Division and 27th Engineer Battalion (Combat) units.

d. In mid-March a new Battalion supply warehouse was completed and small construction materials and offices moved into it. Tents and conex containers formerly used were emptied and the improved accessibility of materials increased issue speed.

e. The Battalion was alerted for a unit move from Blackhorse Base Camp to Gia Le in the Hue-Phu Bai area approximately 24 March 1968. Initial information from our eventual destination indicated that certain supplies and repair parts were in short supply. The Battalion was instructed to move with 100 percent TOE equipment and a 60-day PLL. The Property Book Officer and Engineer Maintenance Officer moved to the Long Binh-Saigon depot area where they supervised a concentrated effort to obtain TOE shortages and repair parts, respectively. They stayed in the area until the end of April and had considerable success in obtaining needed items; over 60 percent of requisitions submitted and expedited were filled. Some of the TOE items which had been on priority requests for months were located not by depot but by Battalion personnel.

f. An effort was made to submit Transportation Control and Movement Documents (DD Form 1384) to the Transportation Movement Agency (TMA) as soon as possible after receipt of the movement order. After considerable discussion it was decided to ship wheeled vehicles up to 5-ton dump trucks and some 160 conex containers into Da Nang on a deep-draft

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vessel and to ship Engineer items on LST's to Tan My. Total requirements were one deep draft and seven LST's. Additional transportation was requested to move the conox containers to Saigon port; S-4 forklift, Battalion Maintenance wrecker and cranes were used extensively to load trucks.

g. The S-4 NCOIC took charge of turn-in of excess, unserviceable and station property at Blackhorse. Companies were required to have the property inspected for serviceability before it would be accepted. There was such a large number of supply transactions and equipment to be turned in that actions were not completed when the main body departed. The S-4 NCOIC and his team remained behind with the property records to complete their business. They remained at Blackhorse until the end of April.

h. The S-4 Officer, water points and the remainder of supply section moved with the main body, which closed in Gia Le on 12 April 1968. One water point was deployed with A Company, 27th Engineer Battalion (Combat) immediately. Initial effort was to establish supply accounts with support activities, several of which are in Da Nang. As conoxes were received and supplies began to arrive, sholving was built in the 40' x 100' S-4 warehouse. After being divided among three locations during the unit move, the Battalion supply section was essentially united and operational at the end of April.

6. Force Development: None

7. Command Management: Command and control at the Battalion level is restricted by the lack of organic aviation. Coordination is made with supported tactical units for flights to inspect, control and resupply elements of this command which are located in areas which cannot be reached by other means. The whole management process is compromised to a degree by the non-availability of responsive transportation. See Section II, Part II Recommendations.

8. Inspector General: None this period.

9. Civic Affairs:

a. During this period frequent assistance to local Hamlets was provided (primarily grader work to improve interior roads and access roads to the main highway).

b. Coordination has been made to begin a logging operation to provide lumber for rebuilding the City of Hue. Elements of this Battalion will cut, trim and load usable timber in conjunction with local tactical operations.

SECTION II PART I - Observations (Lessons Learned)

1. Personnel: None

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2. Operations

a. Item: Enemy Mines

DISCUSSION: The common practice of Engineer units has been to "blow-in-place" any discovered enemy mine. This results in a three to five foot diameter crater. Whenever possible this unit has attempted to extract mines located in an LOC or MSR road. With a short length of WD-1 wire and some careful handwork this removal can be accomplished with little danger.

OBSERVATIONS: Removing the mine allows the road to be reopened immediately, eliminates the necessity of repairing a crater and denies the VC one of their favorite mine locations - a recently repaired, mine caused, road crater.

b. Item: LOC Interdiction

DISCUSSION: During the TET offensive the Viet Cong would nightly affect some form of LOC interdiction. After coordination with the local tactical unit the 27th Engineer Battalion (Combat) succeeded in having an Engineer Officer accompany a morning aerial recon of all major roads within their AOR.

OBSERVATIONS: An Engineer Officer reporting information on LOC interdictions allows a timely, accurate, Engineer response.

c. Item: Unit Move

DISCUSSION: Prior to the "show-time" of 27th Engineer Battalion (Combat) equipment at the Saigon docks, one Officer (S-2) and senior NCO were dispatched to the docks to effect coordination with the Transportation Movement Agency Headquarters (responsible for overall planning of the unit move), 4th Transportation Command (in charge of the Saigon Docks) and 125th Transportation Company (directly responsible for loading 27th Engineer Battalion (Combat) equipment). Because of the congestion in Saigon itself as well as on the docks, scheduling the movement of equipment from the Battalion staging area at Bien Hoa to ship side was critical. Effective coordination between the transportation agencies and the 27th Engineer Battalion (Combat) made this loading operation go smoothly.

OBSERVATION: Close coordination with the Transportation Agency responsible for a unit's move is essential for a smooth move.

d. Item: Wall Panel Screws for Adams Hut

DISCUSSION: It was noted that the $\frac{1}{4}$ inch drill issued with an Adams Hut was too large for its purpose.

OBSERVATIONS: A $\frac{3}{16}$ inch drill found in the electric pioneer kit will produce the correct size hole.

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e. Item: Reinforcement of Unstable Base for Culverts

DISCUSSION: It was found during the construction of a culvert bridge that the soil in the old stream bed was extremely unstable.

OBSERVATIONS: It was found that the excavation of three to four feet of the unstable soil followed by the placement of large rock still did not give a stable enough base for the culverts. Three concrete pads were then poured, one under each headwall and one in the center of the area, this provided a solid base for the culverts.

f. Item: Prevention of Undermining on the Downstream Side of a Culvert Bridge

DISCUSSION: It was determined that the volume of water coming through five 72" culverts would undermine the soil beneath the headwall on the downstream side.

OBSERVATIONS: A concrete pad was placed extending from the culverts sloping upward to 4" in 6'. At the end of the pad, existing material was excavated and large rocks emplaced. Those actions prevented erosion under the headwall and pad to any significant degree.

g. Item: Pinning of M8A1 Matting

DISCUSSION: When placing and pinning a large pad of M8A1 matting difficulty was encountered when a pneumatic hammer was used to secure the locking pins. Shifting of the panels caused the locking cleats to shift to a position where the panels were no longer locked together.

OBSERVATIONS: A pneumatic hammer is the easiest and most expedient means of pinning M8A1 matting, but care should be taken to insure that panels do not slip. Pinning one pin per panel requires more moving of the hammer but also ensures that the panels do not slip.

h. Item: Mortar Attacks

OBSERVATIONS: When under mortar attack keep one man in each foxhole alert for sappers. Sappers often infiltrate defense positions during mortar attacks and toss satchel charges into bunkers.

3. Training and Organization: None

4. Intelligence:

Item: Mines

DISCUSSION: It was noted that in the Hue-Phu Bai area the enemy will plant a mine deeper than normal and place scrap metal a few inches above the mine.

OBSERVATIONS: A mine detector operator should continue to check the suspected area until he fails to get a signal.

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5. Logistics and Maintenance

Item: Water for Batteries

DISCUSSION: Many batteries in the units equipment were going dead or shorting out within a couple of months of their installment. Upon examination of the cells of the batteries they were found to be covered with a white chalk-like compound. A new battery was installed but when initially charged the water used was filtered non-potable, instead of potable water which was used in the past.

OBSERVATIONS: It was found that the battery when charged with clean non-potable water attained a full charge status faster than previously noted and that the battery life has been extended beyond that of a battery charged with potable water; also the chalk-like coating of the cells has been eliminated.

SECTION II PART II RECOMMENDATIONS

1. Personnel: None

2. Operations:

a. Because of the wide dispersion and unaccessability of the Engineer troops assigned and attached to this Battalion and variety of Engineer missions assigned, it has become apparent that proper command, control and technical assistance and guidance are impossible without the use of aircraft. The limited resources available to higher Engineer Headquarters do not enable them to provide sufficient aerial sorties to satisfy this unit's requirements. Local aircraft resources are normally committed on higher priority combat assault or combat support missions.

b. It is recommended that as a minimum, one UH-23 be assigned to the Engineer Battalion (Combat) (Army).

3. Training and Organization: None

4. Intelligence: None

5. Logistics: None

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EGD-3 (7 May 1968) 1st Ind

SUBJECT: Operational Report - Lessons Learned, Headquarters, 27th Engineer Battalion (Combat), for Quarter Ending 30 April 1968, RCS CSFOR-65 (RI)

DA, HEADQUARTERS 45TH ENGINEER GROUP, CONSTRUCTION, APO 96337 13 MAY 1968

TO: Commanding General, 18th Engineer Brigade, APO 96377

1. This Headquarters has reviewed the Operational Report - Lessons Learned for the 27th Engineer Battalion and considers it an accurate description of activities and accomplishments during the reporting period ending 30 April 1968.

2. Concur with the Battalion Commander's observations and recommendations except for his recommendation that as a minimum, one OH-23 be assigned to combat engineer battalions (Army). This headquarters agrees that it does not have sufficient aircraft to provide commanders with necessary reconnaissance and command control capability. Higher Headquarters supported this fact in their indorsements to the last ORLL of the 45th Engineer Group. As stated by USAFV in the 3rd indorsement to this ORLL, a recent DA study, ARCSAII, recommends a significant increase in aviation organic to engineer units. This Headquarters believes that sufficient aircraft should be available to meet the needs of subordinate commanders; however, they should be controlled at Group level. Central control is necessary for proper maintenance, supervision, and flexibility. Aircraft should be made available to subordinate commanders for specific missions or for limited periods of time. Assignment to a battalion would create problems negating the obvious advantages.

George B. Fink
GEORGE B. FINK
COL, CE
Commanding

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LAVBC-C (7 May 1968) and and

SUBJECT: Operational Report of the 27th Engineer Battalion (Combat)
for the period ending 30 April 1968, LBL-OSFOR-65 (R1)

DA, Headquarters, 18th Engineer Brigade, LPO 96377

TO: Commanding General, United States Army, Vietnam, AFM: LAVHC-DST,
LPO 96375

1. This headquarters has reviewed the Operational Report - Lessons Learned for the 27th Engineer Battalion (Combat) for the period ending 30 April 1968 as indexed by the 45th Engineer Group. The report is considered to be an excellent account of the activities of the Battalion.

2. This headquarters concurs with the Battalion Commander's comments and recommendations, with the exception of Section 11, Part 11, paragraph a. The Group Commander's comments are concurred with regarding the insufficiency of aviation resources. Recognizing this problem, this headquarters strongly opposes any recommendation to increase the aviation assets of Engineer units within the scope of the comments made by the Group Commander.

Donald K. Blue

DOUGLAS K. BLUE
Colonel, ON
Deputy Commander

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AVHGC-DST (7 May 68) 3d Ind (C) CPT Arnold/dls/LBN 4485
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 30 April 1968

HEADQUARTERS, US ARMY VIETNAM, APO San Francisco 96375 1 JUL 1968

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,
APO 96558

1. (U) This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 30 April 1968 from Headquarters, 27th Engineer Battalion (Combat) as indorsed.

2. (C) Reference item concerning requirement for additional aircraft, page 18, paragraph 2a & b; 1st Indorsement, paragraph 2 and 2d Indorsement, paragraph 2. Concur with the requirement for additional aircraft. However, DA policy expressed in DA Confidential message 763149 ACSFOR Avn, subj: Aviation Units for RVN, established a moratorium on providing aircraft and aviators to combat support and combat service support units deploying to RVN with aviation sections authorized but not filled. Aviation support requirements should continue to be forwarded through presently established procedures.

FOR THE COMMANDER:

C. S. Nakatsukasa
C. S. NAKATSUKASA
Captain, AGC
Assistant Adjutant General

Cy furn:
HQ 27th Engr Bn
HQ 18th Engr Bde

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DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10

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GPOP-DT (7 May 68) 4th Ind (C)
SUBJECT: Operational Report of HQ, 27th Engr Bn (Cbt) for Period
Ending 30 April 1968, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 3 JUL 1968

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

(C) This headquarters has evaluated subject report and forwarding
indorsements and concurs in the report as indorsed with the following
exception:

That portion of paragraph 2, 3d Indorsement which states that DA
policy "established a moratorium on providing aircraft and aviators to
combat support and combat service support units deploying to RVN with
aviation section authorized but not filled" is not completely correct.
The policy is not a "DA policy" but the result of an agreement between
DA and USARV at USARV's request to fill higher priority aviation require-
ments in accordance with USARV's established priorities. Aviation
assets required to fill those engineer units approved for fill by USARV
were programmed to be filled on or about 4th Quarter FY 69 based on
USARV's priorities established during the aviation conference held at
USARV on 21-31 January 1968.

FOR THE COMMANDER IN CHIEF:

CEP/Smith

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DEPARTMENT OF THE ARMY
591st Engineer Company (Light Equipment)
APO San Francisco 96308

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30 April 1968

SUBJECT: Operational Report-Lessons Learned, (RCS CSFOR-65) for the
Quarterly Period Ending 30 April 1968

THRU: Commanding Officer
45th Engineer Group
APO US Forces 96337

THRU: Commanding General
18th Engineer Brigade
APO US Forces 96377

THRU: Commanding General
United States Army, Vietnam
ATTN: AVHGC-DH
APO US Forces 96375

THRU: Commander in Chief
United States Army, Pacific
ATTN: GHOP-OT
APO San Francisco, California 96588

TO: Assistant Chief of Staff for Force Development
Department of the Army (ACSFOR-DA)
Washington, DC 20310

SECTION I - Significant Organizational or Unit Activities

1. Command

a. During the period 1 February 1968 to 5 April 1968 the 591st Engineer Company (LE) was assigned to the 20th Engineer Brigade and continued in its attachment to the 27th Engineer Battalion (C) for operation control.

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31 April 1968

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SUBJECT: Operational Report-Lessons Learned, (RCS CSFOR-65) for the
Quarterly Period Ending 30 April 1968 (CON'T)

b. On 5 April 1968 the company was assigned to the 18th Engineer Brigade and continued in its attachment for operational control to the 27th Engineer Battalion (C) which was also transferred to the 18th Engineer Brigade.

c. During the period 1 February 1968 to 5 April 1968 the company was located at Blackhorse Base Camp RVN (XS 438975). The major activities consisted of Airfield construction; combat support of II Field Forces Vietnam (IIFFV); LOC restoration; rehabilitation and upgrading; and preparation for movement.

d. On 5 April the company headquarters and all Ordnance Equipment moved by motor convoy to Bien Hoa RVN to stage the equipment for sea movement. On 6 April the equipment was taken to the Saigon Docks and loaded aboard the Sea Train Ohio.

e. On 7 April the remainder of the unit to include all the engineer equipment moved to Bien Hoa to stage for sea movement by LST.

f. On 10 April the company headquarters plus all ordnance equipment operators moved by C-130 aircraft to Da Nang RVN. The Sea Train Ohio had arrived in Da Nang and for the next 24 hours the unit unloaded the vehicles and moved to a staging area adjacent to the 35th Engineer Battalion (C).

g. On 12 April the company moved with the 27th Engineer Battalion (C) by motor convoy from Da Nang RVN to Gia Le RVN.

h. During the period 12 April 1968 to 30 April 1968 the major activities consisted of modifying ten (10) D-7E Tractors for Rome Flows and moving them to Bastogne Fire Support Base for road clearing in support of Operations with the 1st Brigade 101st Airborne Division. In addition the company started work on upgrading and surfacing roads in the 101st Airborne Divisions Base Camp and area of operations. The majority of the engineer equipment had arrived by LST at the close of the reporting period. The rock crusher and one 25 Ton Semi Trailer has yet to arrive however it is planned for shipment in the very near future.

i. There were no command changes during the period of this report.

j. Organization

(1) The unit was organized under TOE 5-54D.

(2) 183 personnel

(a) Two sections of the 67th Engineer Co (DT) (1 February 1968-5 April 1968) for operational control.

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31 April 1968

SUBJECT: Operational Report-Lessons Learned, (RCS CSFOR-65) for the Quarterly Period Ending 30 April 1968. (Con't)

(b) From 27th Engineer Battalion (C): 5 D-7E Tractors, 5 each 5 Ton Tractors with 25ton low bed trailers all with operators

(C) Contact Truck with two mechanics from 67th Maintenance Company.

k. The following awards were received by members of the company:

<u>AWARD</u>	<u>NUMBER</u>
Purple heart	4
Army Commendation Medal	1

2. Personnel, Administration, Morale and Discipline.

a. At the end of the reporting period the strength was:

	<u>O</u>	<u>WO</u>	<u>EM</u>	<u>AGG</u>
Authorized	5	1	180	186
Assigned	3	1	164	168

b. Personnel Statistics:

KIA: 1
WIA: 10
ETS: 32
Transferred within RVN: 24
Other Losses: 7

c. Administration: No administrative problems developed which could not be solved within the unit.

d. Morale: The morale within the unit has continued at an exceptionally high level.

e. Discipline: During the period the unit had 9 non-judicial punishments, 1 AMOL and 2 Special Courts-Martial.

3. Intelligence and Counterintelligence

a. All intelligence information is obtained from the 27th Engineer Battalion (C) S-2.

b. Counter Intelligence:

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30 April 1968

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SUBJECT: Operations Report - Lessons Learned, (RCS CSFOR-65) for the
Quarterly Period Ending 30 April 1968 (Cont'd)

(1) Since 1 February 1968 the company has had 9 incidents involving enemy mines, rockets, mortars or sniper fire which resulted in the loss of 6 pieces of equipment, damage to 3 other pieces, one KIA and ten WIA.

(a) On 6 February a 25-ton low bed semi-trailer struck a mine resulting in the combat loss of the trailer and slight injury to the operator of the 5-ton tractor. The crater was 4 feet in diameter and 3 feet deep. The charge was estimated at 20-30 pounds. Other mines were found in the road in the same area. It was determined that the type of mine used can sustain several passovers by vehicles before detonating. The mine was believed to be locally fabricated.

(b) On 20 February a 5-ton tractor struck a mine which destroyed the right front tire and caused other minor damage however there were no personnel injured. The mine was later determined to be a Russian-made RPG warhead with a pressure device and batteries.

(c) On 21 February a 5-ton tractor struck a mine in the roadway causing extensive damage to the tractor and severe injury to the two personnel in the vehicle. The crater was 8 feet in diameter and 6 feet deep. The charge was estimated at 40-50 lbs and was buried deep which caused the detectors to miss it. Several vehicles had passed over the mine prior to the one which detonated it.

(d) On 29 February an eighteen-yard 290M Scraper struck a mine in the shoulder of the roadway which destroyed the right rear wheel and caused other extensive damage to the scraper. It was turned in as a combat loss. The crater was 4 feet in diameter and 3 feet deep. The mine was determined to be locally produced and estimated at 30-40 lbs. No personnel were injured.

(e) On 4 March 1968 a 290M tractor pulling an 18 cu yd scraper struck a mine in the roadway which destroyed the left rear tire and wheel and caused extensive damage to the tractor. It was turned in as a combat loss. The crater was 5 feet in diameter and 4 feet deep. The mine was determined to be non-metallic and estimated to be 40-50 lbs. No personnel were injured.

(f) On 13 March a 5-ton dump truck struck a mine with the inner right rear duals which destroyed a brake line. The mine was found to be a warhead of a Russian-made RPG with pressure detonator and batteries.

(g) On 30 March one of the security personnel in a laterite pit stepped on a mine which left a crater 5 feet in diameter and four feet deep. Another mine was found which was assumed to be the same. It was a metallic anti-tank mine with a locally produced tilt rod, very sensitive in nature. The rod was made from an expended cartridge approximately .30 caliber which

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was crimped around a small spring loaded plunger in the detonator. When the cartridge case was struck lightly it released the plunger and detonated the firing device. The man was killed.

(g) On 25 April the rome plow platoon had just returned to base camp when the camp came under enemy rocket attack. One rocket exploded near the platoon. The flying shrapnel wounded 5 personnel and caused numerous large holes in a 600 gallon fiber glass water trailer and a contact truck.

(h) On 29 April a rome plow operating on a land clearing mission was struck in the rear hydraulic lines by what was determined to be an RPG round. The tractor caught fire immediately and could not be extinguished readily. The tractor has been determined non repairable. Also lost were an M16E1 rifle, an AN/PRC 25 radio, a protective vest and a tanker's helmet.

(2) It is concluded that enemy mine warfare is highly diversified and that training is being conducted at local levels by the enemy to obtain effective results against engineer work parties and security forces.

4. Plans Operations and Training

a. Plans

(1) The rome plow team has been tasked to continue clearing along highway 547.

(2) Upon arrival of the Rock Crusher plans call for it to be put into operation at a quarry in the vicinity of Coordinates, YD 725125. The quarry is presently being operated by a Navy Mobile construction Battalion (Sea Bees).

(3) Two platoons are currently constructing and upgrading LOC's west of Gia Le. The current plans are to upgrade approximately 17 kilometers of road from Gia Le vic YD 825135 to Fire Support Base Birmingham vic YD 704102.

b.. Cantonment Construction Activities

(1) The Support Platoon completed the drainage and sealing of the helipad area for the 135th Assault Helicopter company at Blackhorse. The project required extensive grading and hauling out of excess material, stabilizing the surface and applying an RC 800/diesel cut back.

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Quarterly Period Ending 30 April 1968 (Con't)

Man Hours	823
Equipment hours	454
RC 800/diesel mixture	31,775 gallons.

(2) The company was given the project to stabilize the perimeter road at Blackhorse. The project consisted of rehabilitating the existing surface, hauling out massive amounts of powder fine dust, applying 6" lift of 3"(-) rock from Gia Ray RVN and finally reshaping the ditches. Prior to the unit move on 5 April the company had completed 90,600 sq ft of 816,000 sq ft required. One platoon (-) was committed to the project supported by two sections of the 67 Engineer Company (DT).

Man Hours	2373
Equipment hours	2872
Cu yds of Rock	2320

(3) Elements of the Second Equipment Platoon completed the earthwork and rock surfacing for a convoy marshalling area at Blackhorse RVN. The project consisted of leveling an area adjacent to the airfield and applying a 6" lift of 3"(-) rock from Gia Ray Quarry.

Man Hours	1670
Equipment Hours	831
Cu yds Rock	460
Cu yds of Material	10,600

(4) The company continued to support the Battalion with equipment for cantonment construction. The dump trucks hauled rock for the concrete batch plant. The 75TH Crusher was set up at the batch plant to provide aggregate for concrete. Other equipment such as cranes, graders and dozers with operators were committed daily.

(5) On a weekly basis the unit provided dump trucks and low beds for logistical convoys between Long Binh and Blackhorse.

c. Earthwork Construction

(1) The company completed all the earthwork construction for the parking area of the C-130 airfield at Xuan Loc RVN. The project given to the unit, consisted of the design and construction of a parking apron 900' X 240' with two taxi access ramps. One platoon was committed to the project.

Man Hours	5873
Equipment Hours	1896
Cu yds of Earth Moved	64,664

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SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 30 April 1968 (Cont)

(2) The company continued full scale upgrading of LTL 2 during the period with one reinforced construction platoon. The platoon was assisted by one combat engineer platoon to complete drainage structures plus equipment from the heavy equipment platoon of HHC 27th Engineer Battalion. The mission consisted of widening 6 miles of road between Blackhorse and the intersection of routes LTL-2 and QL-1. Great progress was made during the period and at the time of the unit move over 5 miles had been completed.

Man Hours	9900
Equipment Hours	6510
Cu yds of Earth Moved	85,700

(3) One equipment platoon continued in support of C Company 27th Engineer Battalion (C) to upgrade QL-1 from the intersection with LTL-333 to the intersection with LTL-2. The Platoon continued widening the road and backfilling over two major bridge sites.

d. Operational Support

(1) Elements of one equipment platoon responded to an urgent requirement to construct a fire support base on QL-1 at its intersection with LTL 2B. The work force supported by some plows from the 86th Land Clearing Platoon and equipment from the 36th Engineer Bn (Const) completed the project in 15 days.

Man Hours	1072
Equipment Hours	742
Cu yds Material Hauled	35,000
Acres of Land Cleared	141 acres

(2) The company provided equipment on a periodic basis for support of the 11th Armored Cavalry Regiment and the 11th Infantry Division units.

(3) Elements of one platoon was tasked to construct a parking ramp for the C-123 airstrip at Blackhorse RVN. The apron was to be 900' long by 150' wide. Also the drainage plan was to be improved and reshaped. One half of both parts of the project was completed by the time of the unit move.

Man Hours	1930
Equipment Hours	1563
Material Hauled	64,158 cu yds

(4) The company organized a land clearing platoon to support the 101st Airborne Division on operation Sheridan. The equipment arrived on 17 April and on 21 April the platoon moved to FSB Birmingham to begin clearing operations with 4 some plows and one straight blade. On 23 April the

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platoon moved to Fire Support Base Bastogne to continue clearing. At the close of the reporting period the platoon had accomplished approximately 50% of the necessary work. Three more plows have been moved to Bastogne.

(5) One equipment platoon started work on a portion of LTL 547 in conjunction with road maintenance and rehabilitation being accomplished by Company A, 27th Engineer Battalion (C). The project consists of upgrading and rehabilitating approximately 10 Kilometers of road and constructing an approach ramp for a bridge under construction by a Navy Mobile Construction Battalion.

(6) One equipment platoon is presently engaged in constructing a bypass around Camp Eagle, the Base Camp of the 101st Airborne Division. The project consists of upgrading approximately 7 Kilometers of existing road and constructing 3 Kilometers of new road to link up with the above project.

(7) The Support Platoon is progressing with a project to upgrade and surface a convoy route through camp Eagle. The road is approximately 5 Kilometers long and requires some rehabilitation and the application of a 6" lift of 3"(-) rock. The project is nearly 15% complete.

e. Training

(1) The company conducted training in the following mandatory subjects during the period:

- Safety
- Character Guidance
- Command Information
- M-16 Care and Cleaning
- Sentry Duty
- Map Reading
- Weapons Test Firing

(2) The Company lost many of its experienced operators during the period which necessitated a great deal of extra training for the new personnel. Selected NCO's in the company conducted classes on the operation and maintenance of the following equipment:

- 290 M Tractor Scraper
- Tractor D 7-E
- Road Grader
- Front Loader
- Intrenching Machine
- Crane, 20 Ton Rough Terrain

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(3) Other operator training was accomplished on the job sites.

5. Logistics The company encountered few logistic problems during the reporting period except for a number of maintenance repair parts. Inner tubes of all sizes have been especially difficult to obtain through supply channels.

6. Command Management No Problems.

7. Inspector General No Problems.

8. Civil Affairs None.

SECTION 2 - Observations (Lessons Learned)

1. Personnel None.

2. Operations

a. Item: Land Clearing Platoon

Discussion: In response to the directive to perform a land clearing mission, this unit reorganized its three Equipment Platoons into two Equipment Platoons and a Land Clearing Platoon. All D-7's (10) were converted to Rome plows with issued kits and, with the addition of two M 548 Cargo Carriers for Contact Maintenance, performed in a highly satisfactory manner. The remaining two equipment platoons are augmented with the leftover equipment from the third platoon but having no D-7's seriously affects their capability. In order to accomplish their mission, five D-7's were taken from assets of the 27th Engr Bn (C), in turn seriously reducing the flexibility of the Battalion.

Observation: A Light Equipment Company has the equipment, experienced personnel, and maintenance capability to allow rapid creation of a Land Clearing Platoon. Unless the tractor dozers come from some outside asset, the earthmoving capability of the company will be seriously reduced.

b. Item: Clearing Jungle in Steep Terrain

Discussion: Prior to assembling a land clearing platoon, this unit read the numerous lessons learned and memorandums compiled by the 86th Land Clearing Team which has been operating in the III Corps tactical zone. The method of clearing in relatively flat terrain in rubber plantation is far different from that in the mountainous jungle predominant in I Corps tactical zone. The echeloning of plows and spiraling inward in a Counter

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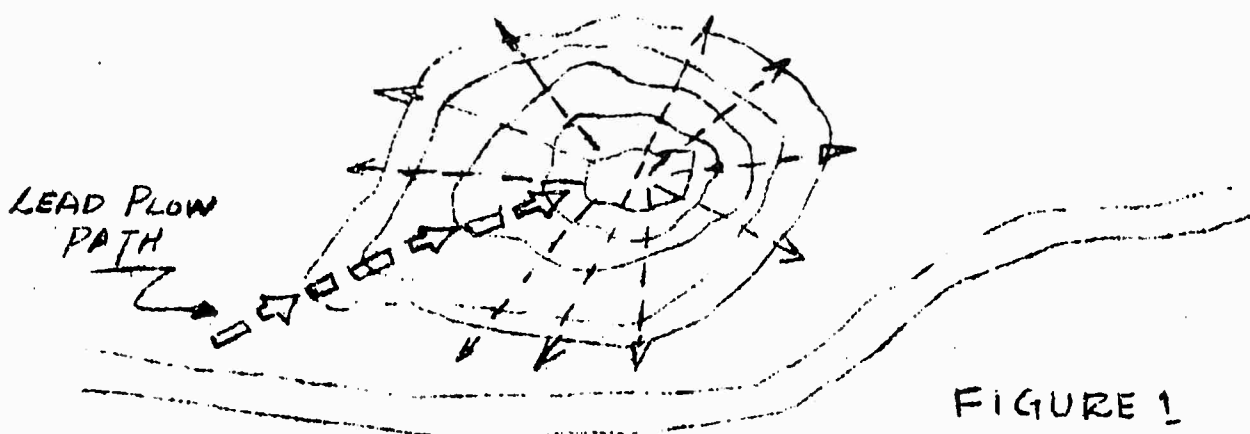
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Clockwise direction can rarely if ever be applied.

Observations: All areas are not similar and techniques must vary to suit the terrain however one technique has been tried and proven satisfactory. When there is a steep sided hill which must be cleared it has been found that by sending one plow up the easiest approach to the top to clear a small area at the crest, then the rest of the plows can follow. A good number of plows to use per hill is 5 or less. Once at the top the plows start straight down the hill in a many sided star or spoke pattern (Figure 1). It is also imperative that the OIC or supervisor of the plows discuss the details of the terrain with the operators to avoid having plows



fall into holes or off steep banks. The security forces can assist greatly by reporting all obstacles during their sweep of the area.

c. Item: Laterite pit security

Discussion: Engineers by their very nature and especially because of their training, are constantly endeavoring to increase efficiency on a job site to obtain maximum production. A laterite pit which is well organized has entrances and exits and is usually a set length after a few passes. Patterns are established by the supervisor and the operators during the loading. The haul road is normally set and maintained for a maximum speed and operator comfort. The patterns that are established are easy to see by even the least educated enemy soldier. It is in the haul roads and turn around areas that the VC place mines. Even a relatively small mine of 15 to 20 pounds can completely disable if not cause the loss of an earth mover such as the 290M Tractor Scraper.

Observation: There are no fool-proof methods of eliminating the mine problem however, a few simple rules of thumb can hold down the odds.

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(1) Insure that adequate security of the area is available.

(2) Make the laterite pit large enough (providing there is enough real estate) to alter the cutting patterns and access.

(3) Be sure that the pit is swept with mine detectors at critical points prior to entering.

(4) Keep the children and other "observers" well out of the pit area. You cannot tell who Charlie may use for his spies.

(5) Several passes with a dozer over the area to be traveled by the rubber-tired equipment may detect mines. It is easier to replace one or two track pads than a 290M tire.

(6) Insure that the security personnel do not set up in the same place or use established trails to get into position.

(7) Do not stop at the same area for lunch each day. Anti-personnel mines have been set up on numerous occasions.

(8) Above all, never let down the guard. Charlie is constantly on the watch for patterns to be established so that he can set up ambushes or put his mines to good use.

d. Item: Loading Low Bed Trailers on an LST

Discussion: During the recent move, this company found that the hump in the entrance of an LST is a definite obstacle to loading and offloading low bed semi trailers when pulled by the 5-ton tractor. If care is not taken, the landing jacks will hang up on the hump causing instant immobility in any direction. The jacks fit snugly into the non-slip projections on loading ramps. The vehicle can be winched off however this can cause destruction of the jack stands. See Figure 2.

Observation: With foresight, this problem can be eliminated. First the jack stands must be fully retracted prior to loading or unloading. Then, before either process is attempted, timbers can be placed to a height of 12" on both slanted portions of the ramp. This will raise both the tractor and trailer high enough so that the feet of the jack stands will clear the flat part of the hump.

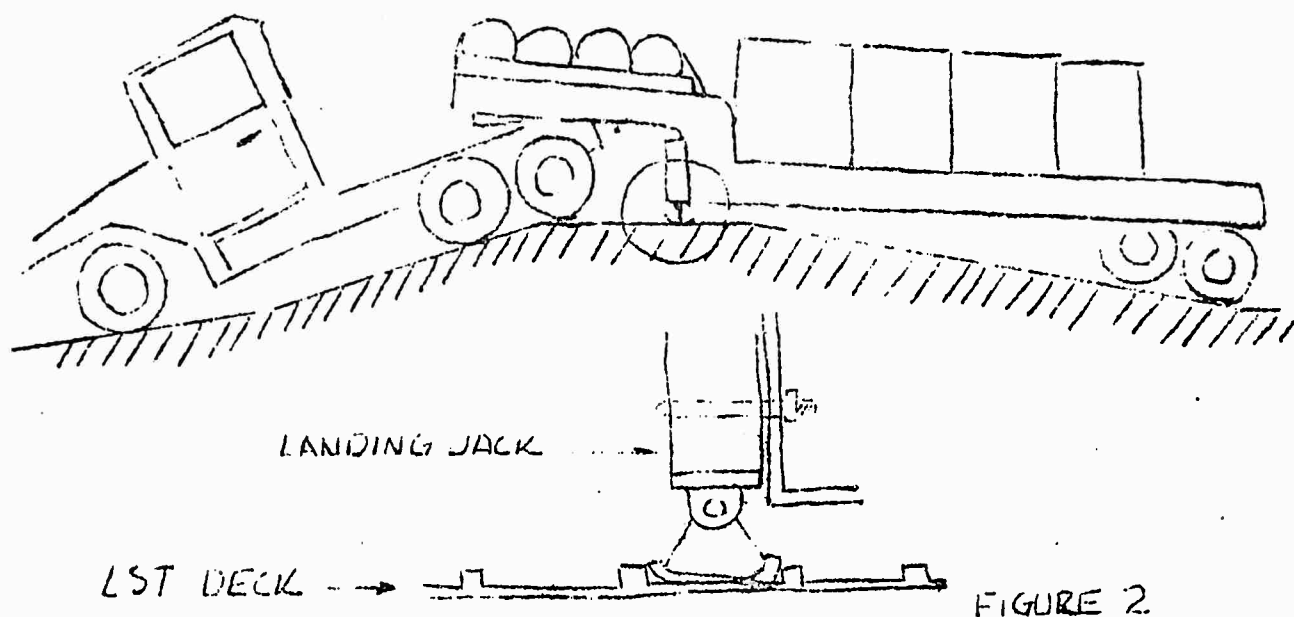
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c. Item: Transporting 55 Gallon POL drums during unit movement

Discussion: During a recent move the company was faced with a lack of space to move the mission essential equipment plus a thirty day supply of POL and necessary construction materials.

Observation: The problem of where to put the POL drums was solved by constructing a simple low sided box around four drums and affixing it to the top of the "goose neck" on the 25 Ton Trailer. (See figure 2)

SECTION 2 Part 2 Recommendations

1. Personnel None
2. Operations

The 591st Engineer Company (IE) continues to operate best when tasked with planning and executing large earthwork projects. The supervisors and operators all perform better when they are responsible for their own projects and are directed by their own superiors. I recommend this practice continued.

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3. Training and Organization

a. Training. None

b. A modified table of organization and equipment has been considered and studied for the light equipment company. Generally the MTOE adds mechanics, increases the maintenance capability to third echelon, adds an operations section to company headquarters and increases the number of operators. All of these additions are necessary. The unit was given 290M Tractor Scrapers instead of the towed scrapers however no additional operators were authorized nor were any pieces of equipment taken from the unit. With the number of projects that the unit is capable of supporting, an operations section or even an operations NCO is a necessary addition. When operating in forward areas it has become necessary on numerous occasions for the maintenance section to go beyond their maintenance authority in order to sustain operations. The time and distance involved in evacuation makes this solution to deadline impractical and in many cases, nearly impossible. I recommend that the MTOE be given strong consideration and early adoption.

4. Intelligence: None

5. Logistics: None


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AFTER ACTION REPORT

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1. Name of Project: Maintenance Hardstand (34-67-77CS-27)
2. Dates of Project: 29 February 1968 to 20 March 1968
3. Location: Blackhorse Base Camp, RVN
4. Command Headquarters: 27th Engineer Battalion (Combat)
5. Task Organization:
 - a. Organic Units: B/27th Engr Bn (C)
 - b. Attachments: None
 - c. Detachments: None
 - d. Supporting Forces: HHC/27th Engr Bn (C)
6. Intelligence: None
7. Mission: Construct a M&A matting surfaced maintenance hardstand area.
8. Concept of Operation: B/27th Engr Bn (C) supported by Heavy Equipment platoon of Headquarters Company initiated and completed mission under the control of S-3/27th Engr Bn (C).
9. Execution:
 - a. Existing grade was shaped to provide a minimum of 0.5% slope for surface water runoff.
 - b. The in-place material was compacted and a homogenous sealing coat of RC-800 was applied. 1,440 gallons of RC-800 was used.
 - c. Prepared site was covered with a M&A matting surface and four temporary revetments (parallel type consisting of a double row of earth-filled 55 gallons drums stacked two high) were constructed on this matting surface.
10. Results:
 - a. Enemy Personnel Losses: 0
 - b. Friendly Personnel Losses: 0
 - c. Enemy Equipment Losses: 0
 - d. Friendly Equipment Losses: 0
 - e. Enemy Structures Destroyed: 0

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11. Administration & Logistics:

a. Administration handled by S-3/27th Engr Bn (C).

b. Logistics handled by S-4/27th Engr Bn (C).

12. Special Equipment and Techniques: None

13. Commander's Analysis and Lessons Learned: None

14. Recommendations: None

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